

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 23 May 2001 (23.05.01)	
International application No. PCT/EP00/09101	Applicant's or agent's file reference PB9810/WO
International filing date (day/month/year) 14 September 2000 (14.09.00)	Priority date (day/month/year) 15 September 1999 (15.09.99)
Applicant BRANDSMA, Arjen et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 04 April 2001 (04.04.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Charlotte ENGER Telephone No.: (41-22) 338.83.38
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Translation

PATENT COOPERATION TREATY

PCT 10/088115

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 1999P06246WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE00/03177	International filing date (day/month/year) 13 September 2000 (13.09.00)	Priority date (day/month/year) 15 September 1999 (15.09.99)
International Patent Classification (IPC) or national classification and IPC H05K 13/08		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

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GROUP 1

Date of submission of the demand 09 March 2001 (09.03.01)	Date of completion of this report 03 September 2001 (03.09.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE00/03177

I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

- ☐ the international application as originally filed.
- ☒ the description, pages 1-8, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. 1-16, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. _____, filed with the letter of _____,
 Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/2,2/2, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 00/03177

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations

- Document US-A-4 293 998 was not acknowledged in the international search report. A copy of this document is attached.
- Document US-A-4 293 998, which is the closest prior art, discloses (cf. in particular column 4, line 31 to column 5, line 52 and Figures 4 and 6) a device according to the first part of Claim 1. The subject matter of Claim 1 differs from this device in that the device has positioning means, each feeding rail having a positioning means associated with it that can, independently of the feeding control data processed in a control unit, be brought into a locking position to block the feeding rail or into an unlocking position to release the feeding rail.

The subject matter of Claim 1 is thus novel (PCT Article 33(2)).

The problem to be solved by the present invention can thus be seen as that of guaranteeing the secure and dependable insertion of electronic components.

The documents cited in the search report do not give any indication of the characterizing features of Claim 1. The solution proposed in Claim 1 of the present application therefore involves an inventive step (PCT Article 33(3)).
- Claims 2 to 16 are dependent upon Claim 1 and thus also satisfy the PCT requirements with respect to novelty and inventive step.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 00/03177

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not cite document US-A-4 293 998 or indicate the relevant prior art disclosed therein.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. For the following reasons, the present Claim 1 does not satisfy the requirement of clarity (PCT Article 6):
 - 1.1. The feature “a bar unit formed from a plurality of components” is introduced in Claim 1. However, in order to be consistent with the feature “a plurality of feeding rails,” a plurality of bar units must also be present.
 - 1.2. The wording of the feature “that one positioning means (10) each is associated with the feeding rail (2)” is unclear insofar as only a “plurality of feeding rails” has been mentioned before. Thus the word “the” should have been replaced by the word “each”.
 - 1.3. The expression “each feeding rail having a positioning means associated with it that can, independently of the feeding control data processed in a control unit ...” describes the relationship of the claimed device to positioning means and to a control unit that are not part of the claimed device for inserting components. Therefore, contrary to the requirements of PCT Article 6, the intended restrictions are not clear in the claim.
In order to clearly define the device *per se*, at least the positioning means should have been named as part of the device.
2. Reference sign 14, which is used in Claim 3, has not been enclosed in parentheses (PCT Rule 6.2(b)).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PB9810/WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/09101	International filing date (day/month/year) 14/09/2000	Priority date (day/month/year) 15/09/1999
International Patent Classification (IPC) or national classification and IPC F16G5/16		
Applicant VAN DOORNE'S TRANSMISSIE B.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 04/04/2001	Date of completion of this report 11.01.2002
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Lorandi, L Telephone No. +49 89 2399 2872



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/09101

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-7 as originally filed

Claims, No.:

1-14 as received on 12/11/2001 with letter of 08/11/2001

Drawings, sheets:

1/2,2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/09101

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 1-8, 9-13, 14.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

☐ restricted the claims.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/09101

- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-8.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

1.1 An amended independent claim 1 has been filed with letter of 08.11.2001.

It appears that most of the features of said amended Claim 1 are known from the US-A1-4,787,961, known as D₁.

In fact, D₁ discloses a belt for use in a continuously variable transmission, comprising one set of nested metal rings 13, the set interacting with transverse elements 14 provided slidably along the set, and the rings of the set being accommodated with small mutual play between each pair of adjacent rings 13, whereby for at least the majority of said pairs of adjacent rings the nominal value of said play is zero (see col.2, l.61 : "...superimposed with no clearance between them.").

Therefore, the subject-matter of the amended Claim 1 differs from this prior art in that said nominal value of zero is realised by positive and negative amounts of play between said pairs of adjacent rings. However, the terms used for this distinguishing feature are vague and unclear and leave the reader in doubt as to the meaning of the technical feature to which they refer, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 PCT).

It is thus believed that the amended claim 1 does not fulfil the requirements of clarity set by Article 6 PCT.

1.2 Therefore, no opinion can be expressed about novelty of the amended Claim 1 and about the inventive step involved therein. The same thus applies to the dependent claims 2 to 8 thereof.

2.1 The subject-matter of the claims 9, 10 and 12 is " i n p a r t i c u l a r " in accordance with to any of the preceding claims. Therefore they are to be formally considered as independent claims.

2.1.1 It appears that a basis for this distinguishing feature should be found on page 3 of the description, lines 1 to 4, where it is stated that the nominal value of zero is realised by a tolerance of $\pm 10^{-5}$ times the outer diameter of the inner ring of a relevant pair of rings.

If this technical measure was meant with the aforesaid unclear distinguishing feature, the amended claim 1 appears to involve no inventive step. In fact, a skilled person is aware that a nominal value of zero is practically impossible to perform. Realising a nominal value of zero, in any kind of mechanism, precisely means reducing the tolerance as much as possible, i.e. performing values around zero which are as close as possible to zero. Doing so, the skilled person arrives to the subject-matter of the amended claim 1.

Therefore, even if it had been clarified, it seems that the distinguishing feature would not have satisfied the requirements of Article 33(3) PCT.

2.2 Considering the claims 9, 10, 12 as independent claims, and assuming that the subject-matter of independent claim 1 is not inventive (see the grounds for this objection), the requisite unity of invention (Rule 13.1 PCT) no longer exists. In fact, it appears that the only concept common to the claims 1, 9, 10 and 12 is given by the combination of features included in the preamble of said

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/09101

claims, which is the same for all of them. Since the combination of features forming the preamble is per definition not novel, the common concept bounding the aforesaid claims is not novel, and the claims 1, 9, 10 and 12 are not so linked as to form a single general inventive concept (Rule 13.1 PCT).

2.3 The same applies to Claim 11, depending on Claim 10 as well as to Claim 13, depending on Claim 12.

3. For the aforesaid reasons, no opinion can be expressed as to the subject-matter of independent claim 14 either.

Patent application no.: PCT/EP00/09101 filed on 14/09/2000
in the name of Van Doorne's Transmissie b.v et al.

Applicant's reference: PB9810/WO

Concern: Annex 1 to Applicants reply of ^{8/11/2001}~~30/10/2001~~ to the IPEA's Written Opinion under
PCT Rule 66 of 30/07/2001.

AMENDED CLAIMS

1. Belt (1) for use in a continuously variable transmission, in particular for automotive application, comprising at least one set (7) of nested metal rings (2), the set (7) interacting with transverse elements (3, 6) provided slidably along the set (7), and the rings (2) of the set (7) being accommodated with small mutual play between each pair of adjacent rings (2), characterised in, that for at least the majority of said pairs of adjacent rings (2) the nominal value of said play is zero, whereby said nominal value of zero is realised by positive and negative amounts of play between said pairs of adjacent rings (2).
2. Belt (1) according to claim 1, characterised in, that the nominal value of zero is realised by a tolerance of 0.00005 times the outer diameter of the inner ring (2) of a relevant pair of rings (2), plus or minus of said diameter.
3. Belt (1) according to claim 1 or 2, characterised in, that said mutual play between the innermost pair of adjacent rings (2) is of negative value.
4. Belt (1) according to claim 3, characterised in, that the outer diameter of the innermost ring (2) is of a value $(1-Z)$ times the inner diameter of the adjacent ring, Z being of a value smaller than 0.0008.
5. Belt (1) according to claim 4, characterised in, that Z is of a value greater than 0.0001.
6. Belt (1) according to any of the preceding claims, characterised in, that the mutual play of the outermost pair of adjacent rings (2) is of positive value.
7. Belt (1) according to claim 6, characterised in, that the inner diameter of the outermost ring (2) is of a value $(1+Y)$ times the outer diameter of the adjacent ring, Y being of a value smaller than 0.0004.
8. Belt (1) according to claim 7, characterised in, that Y is of a value greater than 0.00005.
9. Belt (1), in particular according to any of the preceding claims, for use in a continuously variable transmission, in particular for automotive application, comprising at least one set (7) of nested metal rings (2), the set (7) interacting with transverse elements (3, 6) provided slidably along the set (7), and the rings (2) of the set (7) being

accommodated with small mutual play between each pair of adjacent rings (2), characterised in, that said mutual play of the outermost pair of adjacent rings (2) is of positive value.

10. Belt (1), in particular according to any of the preceding claims, for use in a continuously variable transmission, in particular for automotive application, comprising at least one set (7) of nested metal rings (2), the set (7) interacting with transverse elements (3, 6) provided slidably along the set (7), and the rings (2) of the set (7) being accommodated with small mutual play between each pair of adjacent rings (2), characterised in, that the thickness of one or both of the innermost and the outermost ring (2) of the set (7) is significantly less than the nominal thickness of in-between rings (2) of the set (7).

11. Belt (1) according to claim 10, characterised in, that the thickness of said innermost or said outermost ring (2) is at least lower than twenty percent (20%) of the average value of the thickness of the in-between rings (2).

12. Belt (1), in particular according to any of the preceding claims, for use in a continuously variable transmission, in particular for automotive application, comprising at least one set (7) of nested metal rings (2), the set (7) interacting with transverse elements (3, 6) provided slidably along the set (7), and the rings (2) of the set (7) being accommodated with small mutual play between each pair of adjacent rings (2), characterised in, that the material composition of at least one of the innermost and the outermost ring (2) of the set (7) significantly differs from that of the in-between rings (2) of the set (7), such that the elasticity modulus thereof is significantly lower than that of in-between positioned rings (2).

13. Belt (1) according to claim 12, characterised in, that the elasticity modulus of said innermost and said outermost ring (2) is at least twenty percent (20%) less than the average value of the elasticity modulus of the in-between rings (2).

14. Continuously variable transmission provided with a belt (1) according to any of the preceding claims.